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A_Squared: Perform A²

Calculate A^2 where A is an 8-bit unsigned variable. The result is placed into 16-bit variable C. The 16-bit result is saved using little endian byte ordering.

$C1:C0 = A^2$

Simulation of the multiplication problem 50². The answer should equal 2,500 (0x09C4).

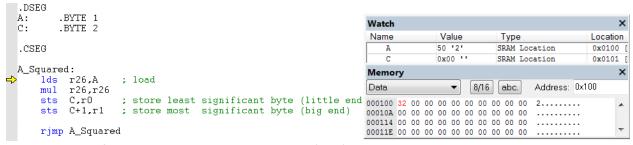


Figure 1: Start of program with A initialized to 0x32 (50_{10}) by double click on variable A on the Watch and enter "50"

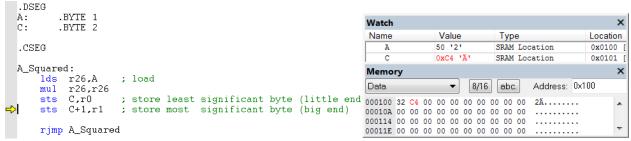


Figure 2: After performing calculation of A^2 (by performing command "mul r26, r26"), result of C0 is 0xC4

```
.DSEG
Α:
         .BYTE 1
                                                                       Watch
C:
        .BYTE 2
                                                                        Name
                                                                                      Value
                                                                                                  Type
                                                                                                                    Location
.CSEG
                                                                                     50 '2'
                                                                                                  SRAM Location
                                                                                                  SRAM Location
                                                                                                                     0x0101
A_Squared:
                                                                        Memory
     lds r26,A
                                                                                           8/16 abc.
                                                                                                         Address: 0x100
                                                                        Data
    mul
          r26,r26
          C,rO
                     ; store least significant byte (little end
                                                                       000100 32 C4 09 00 00 00 00 00 00 00
                                                                                                         2Ä.....
          C+1,r1
                     ; store most significant byte (big end)
                                                                       00010A 00 00 00 00 00 00 00 00 00
                                                                                                         . . . . . . . . . .
    rjmp A_Squared
                                                                       00011E 00 00 00 00 00 00 00 00 00
```

Figure 3: Result of C1 is 0x09. End of program with the result is 0x09C4(2,500₁₀) containing in C1:C0.